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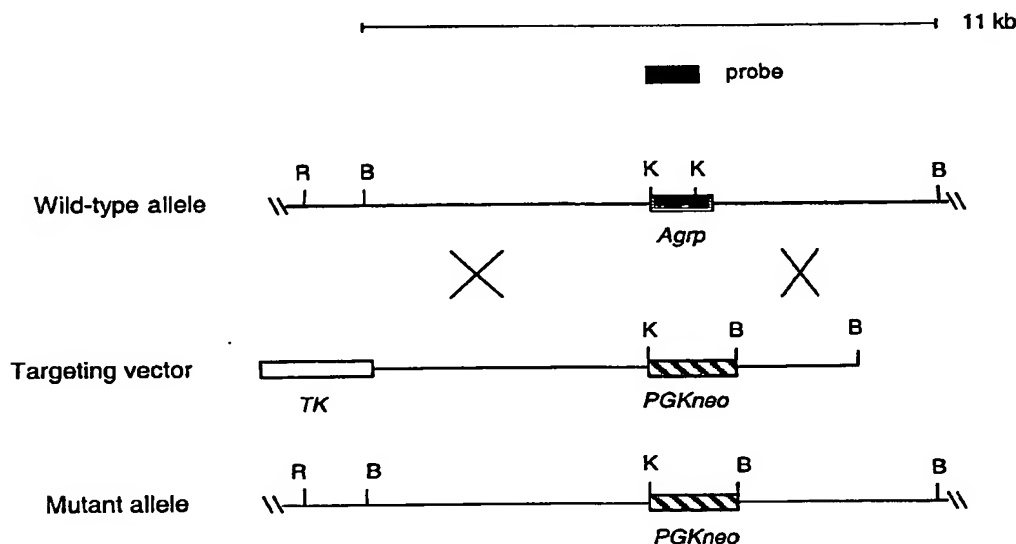
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(54) Title: AGOUTI-RELATED PROTEIN DEFICIENT CELLS, NON-HUMAN TRANSGENIC ANIMALS AND METHODS OF SELECTING COMPOUNDS WHICH REGULATE ENERGY METABOLISM



(57) Abstract: Cells and non-human transgenic animals have been engineered to be deficient in the gene encoding agouti-related protein (AgRP). AgRP deficient transgenic animals have a reduced day time respiratory quotient (RQ), indicating that AgRP is involved in the regulation of energy metabolism, resulting in the reduced usage of fat as an energy source. These AgRP deficient transgenic animals can be used to select for and test potential modulators of AgRP. This data allows for methods of screening for AgRP modulators which regulate energy metabolism and caloric utilization. The disclosure also relates to a NPY/AgRP double knockout mouse which can be used to select for and test potential modulators (e.g., agonists or antagonists) of AgRP and/or NPY.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/20245

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : A01K 67/00 US CL : 800/8		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) U.S. : 800/8		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KAELIN et al. Identification of a regulatory region controlling the spatial expression and fasting response of agouti-related protein in the mouse. Soc. Neurosci. Abstracts. 2000. Vol. 26, No. 1-2, Abstract # 49.	1-20
X	WEINGARTH et al. Neither AGRP nor NPY are critically required for the regulation of energy homeostasis in mice. Soc. Neurosci. Abstract. 2002, Vol. 2002, Abstract # 134. See entire abstract.	1-20
X	QIAN et al. Neither agouti-related protein nor neuropeptide Y is critically required for the regulation of energy homeostasis in mice. Mol. Cell. Biol. July 2002, Vol. 22, No. 14. Pg 5027-5035. See entire article.	1-20
X	WILSON et al. The role of agouti-related protein in regulating body weight. Mol. Med. Today. June 1999, Vol. 5, No. 6, pg 250-256. See entire article.	1-20
X	BARSH et al. Molecular pharmacology of Agouti protein in vitro and in vivo. Annals NY Acad. Sci., 20 October 1999, Vol. 885, pg 143-152. See entire article.	1-20
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Deborah Reynolds Telephone No. 703-308-1235	

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MILLHAUSER et al. Loops and links: structural insights into the remarkable function of the agouti-related protein. Ann. NY Acad. Sci. June 2003. Vol. 994. pg 27-35. See entire article.	1-20
A	DINULESCU et al. Agouti and agouti-related protein: analogies and contrasts. J. Biol. Chem., 10 March 2000. Vol. 275. No. 10. pg 6695-6698. See entire article.	1-20

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Continuation of B. FIELDS SEARCHED Item 3:
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